



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,790	06/27/2003	Neal C. Oliver	42P16531	6526

8791 7590 11/27/2007  
BLAKELY SOKOLOFF TAYLOR & ZAFMAN  
1279 OAKMEAD PARKWAY  
SUNNYVALE, CA 94085-4040

EXAMINER
----------

TRAN, PHILIP B

ART UNIT	PAPER NUMBER
----------	--------------

2155

MAIL DATE	DELIVERY MODE
-----------	---------------

11/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/607,790

Applicant(s)

OLIVER ET AL.

Examiner

Philip B. Tran

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 21-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **Response to Amendment**

### ***Notice to Applicant***

1. This communication is in response to Amendment filed 07 September 2007. Claims 1, 9-10, 12 and 21 have been amended. Claims 13-20 have been canceled. Therefore, claims 1-12 and 21-26 are pending for examination.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-12 and 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Narayana et al (Hereafter, Narayana), U.S. Pat. No. 6,577,635.

Regarding claim 1, Narayana teaches a method comprising:

labeling each received network packet with information identifying an associated flow and a queue in which the packet will await transmission [see Col. 4, Line 57 to Col. 5, Line 9];

mapping each packet into one of a plurality of queues to await transmission based on the packet's label identifiers [see Col. 9, Lines 46-65];

scheduling the packets in the queues for transmission [see Fig. 3 and Abstract and Col. 1, Line 66 to col. 2, Line 16 and Col. 7, Lines 54-63];

encapsulating the packets to form frames of uniform size [see Col. 5, Lines 18-35 and Col. 5, Lines 48-63]; and

transmitting the uniform frames through a switch fabric to a next destination [see Col. 8, Lines 10-41],

wherein the labeling is performed by a first subsystem and the mapping, scheduling, and encapsulating are performed by a second subsystem, the first and second subsystems interconnected via a switch coupled to a switch fabric [see Figs. 1 & 3].

Regarding claim 2, Narayana further teaches the method of claim 1, further comprising decapsulating a received frame of encapsulated packets [see Col. 4, Lines 36-41 and Col. 6, Lines 28-44].

Regarding claim 3, Narayana further teaches the method of claim 1, wherein labeling each packet to identify an associated flow and a queue in which the packet will await transmission comprises determining a flow associated with the packet based on the packet's source address and destination address [see Col. 5, Lines 48-63 and Col. 6, Lines 28-56 and Col. 9, Lines 16-45].

Regarding claim 4, Narayana further teaches the method of claim 3, wherein labeling each packet to identify an associated flow and a queue in which the packet will

await transmission comprises determining a flow associated with the packet based on protocols associated with the packet [see Col. 3, Lines 26-43 and Col. 5, Lines 48-63].

Regarding claim 5, Narayana further teaches the method of claim 1, wherein labeling each packet to identify an associated flow and a queue in which the packet will await transmission comprises determining a traffic class to which the packet belongs [see Col. 6, Lines 28-63].

Regarding claim 6, Narayana further teaches the method of claim 1, wherein encapsulating the packets to form frames of uniform size comprises encapsulating the packets to form frames of uniform size and adding headers that contain information for decoding each frame back into packets [see Col.4, Line 57 to Col. 5, Line 9].

Regarding claim 7, Narayana further teaches the method of claim 1, wherein encapsulating packets to form frames of uniform size comprises encapsulating packets to form frames of uniform size by merging multiple packets into one frame using multiplexing [see Figs. 3-5].

Regarding claim 8, Narayana further teaches the method of claim 1, wherein encapsulating packets to form frames of uniform size comprises encapsulating packets to form frames of uniform size by segmenting a packet and placing the packet segments

into multiple frames using segmentation and reassembly [see Figs. 3-5 and Col. 5, Lines 18-63].

Claim 9 is rejected under the same rationale set forth above to claim 1.

Regarding claim 10, Narayana further teaches the apparatus of claim 9, further comprising an access unit coupled to the classification element through the switch to provide access to communications from the network [see Figs. 3-5 and Col. 6, Lines 56].

Regarding claim 11, Narayana further teaches the apparatus of claim 9, further comprising an adjunct unit to perform signal processing functions [see Fig. 3 and Col. 8, Lines 42-53].

Regarding claim 12, Narayana further teaches the apparatus of claim 9, wherein the switch is coupled to the encapsulation element to transmit the scheduled packets to the next destination through the switch fabric [see Fig. 3 and Col. 5, Lines 36-43 and Col. 8, Lines 10-16].

Claim 21 is rejected under the same rationale set forth above to claim 1.

Narayana further teaches an access unit to provide access to communications from a

network and a switch coupled to the access unit to receive and transmit packets [see Figs. 3-5 and Col. 5, Lines 36-43 and Col. 8, Lines 10-16].

Regarding claim 22, Narayana further teaches the system of claim 21, further comprising an adjunct unit coupled to the switch to perform digital signal processing (DSP) functions [see Fig. 3 and Col. 8, Lines 42-53].

Regarding claims 23-25, Narayana further teaches the system of claim 21, wherein the switch is a PCI-Express/Advanced Switching switch and wherein the switch fabric is a PCI-Express/Advanced Switching fabric and wherein the switch fabric is an Ethernet fabric [see Fig. 3 and Col. 3, Lines 26-43 and Col. 5, Lines 18-35].

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narayana et al (Hereafter, Narayana), U.S. Pat. No. 6,577,635.

Regarding claim 26, Narayana does not explicitly teach the system of claim 21, wherein the switch fabric is an InfiniBand fabric. However, it would have been obvious to one skilled in the art to implement the switch fabric as an infiniband fabric because it would have provided a high bandwidth, low-latency computing, storage and management over a single fabric with servers and storage nodes interconnected by switches that tie all nodes together over a single high-performance network.

***Response to Arguments***

6. Applicant's arguments have been fully considered but they are not persuasive because of the following reasons:

Based on the reasonably broadest interpretation, Narayana still teaches a method and system comprising labeling each received network packet with information identifying an associated flow and a queue in which the packet will await transmission [see Col. 4, Line 57 to Col. 5, Line 9]; mapping each packet into one of a plurality of queues to await transmission based on the packet's label identifiers [see Col. 9, Lines 46-65]; scheduling the packets in the queues for transmission [see Fig. 3 and Abstract and Col. 1, Line 66 to Col. 2, Line 16 and Col. 7, Lines 54-63]; encapsulating the packets to form frames of uniform size [see Col. 5, Lines 18-35 and Col. 5, Lines 48-63];



and transmitting the uniform frames through a switch fabric to a next destination [see Col. 8, Lines 10-41], wherein the labeling is performed by a first subsystem and the mapping, scheduling, and encapsulating are performed by a second subsystem, the first and second subsystems interconnected via a switch coupled to a switch fabric [see Figs. 1 & 3]. That is, different subsystems in different switches are interconnected together.

Therefore, the examiner asserts that the cited prior arts teach or suggest the subject matter recited in independent claims. Dependent claims are rejected at least by virtue of their dependency on independent claims and by other reasons set forth above. Accordingly, claims 1-12 and 21-26 are respectfully rejected as shown above.

### ***Conclusion***

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

**A SHORTENED STATUTORY PERIOD FOR REPLY TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE MAILING DATE OF THIS ACTION. IN THE EVENT A FIRST REPLY IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 CAR 1.136(A) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT, HOWEVER, WILL THE STATUTORY PERIOD FOR REPLY EXPIRE LATER THAN SIX MONTHS FROM THE MAILING DATE OF THIS FINAL ACTION.**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Tran whose telephone number is (571) 272-3991. The Group fax phone number is (571) 273-8300. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar, can be reached on (571) 272-4006.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PHILIP TRAN  
PRIMARY EXAMINER  
Art Unit 2155  
Nov 23, 2007